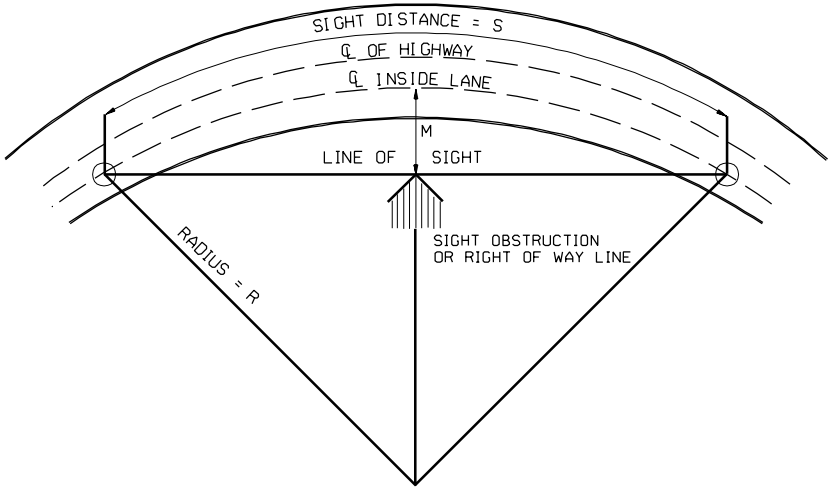

$$M = R\left(1-\cos\frac{90\,S}{3.14\,R}\right)$$

$$\text{AND}\quad S = \frac{3.14\,R}{90}\cos^{-1}\frac{R-M}{R}$$

S = STOPPING SIGHT DISTANCE (m)
M = MIDDLE ORDINATE (m)
R = RADIUS (m)

DESIGN SPEED (km/h)	STOPPING SIGHT DISTANCE (m)	MIN. PASSING SIGHT DISTANCE (m)
30	29.6	217
40	44.4	285
50	57.4-62.8	345
60	74.3-84.6	407
70	94.1-110.8	482
80	112.8-139.4	541
90	131.2-168.7	605
100	157.0-205.0	670
110	179.5-246.4	728
120	202.9-285.6	792

STOPPING SIGHT DISTANCE AASHTO: FIGURES III-24A AND III-24B

PASSING SIGHT DISTANCE AASHTO TABLE III-5

NOTE :

WHEN THE NEEDED STOPPING SIGHT DISTANCE WOULD NOT BE AVAILABLE BECAUSE THE RAILING OR A LONGITUDINAL BARRIER CONSTITUTES THE OBSTRUCTION, ALTERNATIVES SHOULD BE CONSIDERED FOR BOTH SAFETY AND ECONOMIC REASONS. THE ALTERNATES ARE: INCREASE THE OFFSET TO THE OBSTRUCTION, INCREASE THE RADIUS OR REDUCE THE DESIGN SPEED (DESIGN EXCEPTION REQUIRED). HOWEVER, ANY ALTERNATIVE SELECTED SHOULD NOT REQUIRE THE WIDTH OF THE SHOULDER ON THE INSIDE OF THE CURVE TO EXCEED 3.6 m BECAUSE THE POTENTIAL EXISTS THAT DRIVERS WILL USE THE SHOULDERS IN EXCESS OF THAT WIDTH AS A PASSING OR TRAVEL LANE.

ALL DIMENSIONS ARE SHOWN IN METERS (m) UNLESS OTHERWISE NOTED.

REVISIONS

NO.	DATE	APPR.	REMARKS
1	04/27/99	B.A.	CORRECT DIMENSION NOTE
2	10/31/00	F.W.	DELETED GRAPH, REVISED TABLE AND ADDED NOTE.

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — DEC.12.2000 DATE
CHAIRMAN, STANDARDS COMMITTEE
APPROVED — DEC.12.2000 DATE
DEPUTY DIRECTOR

(METRIC)

STANDARD DRAWING TITLE

SIGHT DISTANCE ON HORIZONTAL CURVES

STD. DWG. NO.
805-2B